

S

TS 1000

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TS 1500

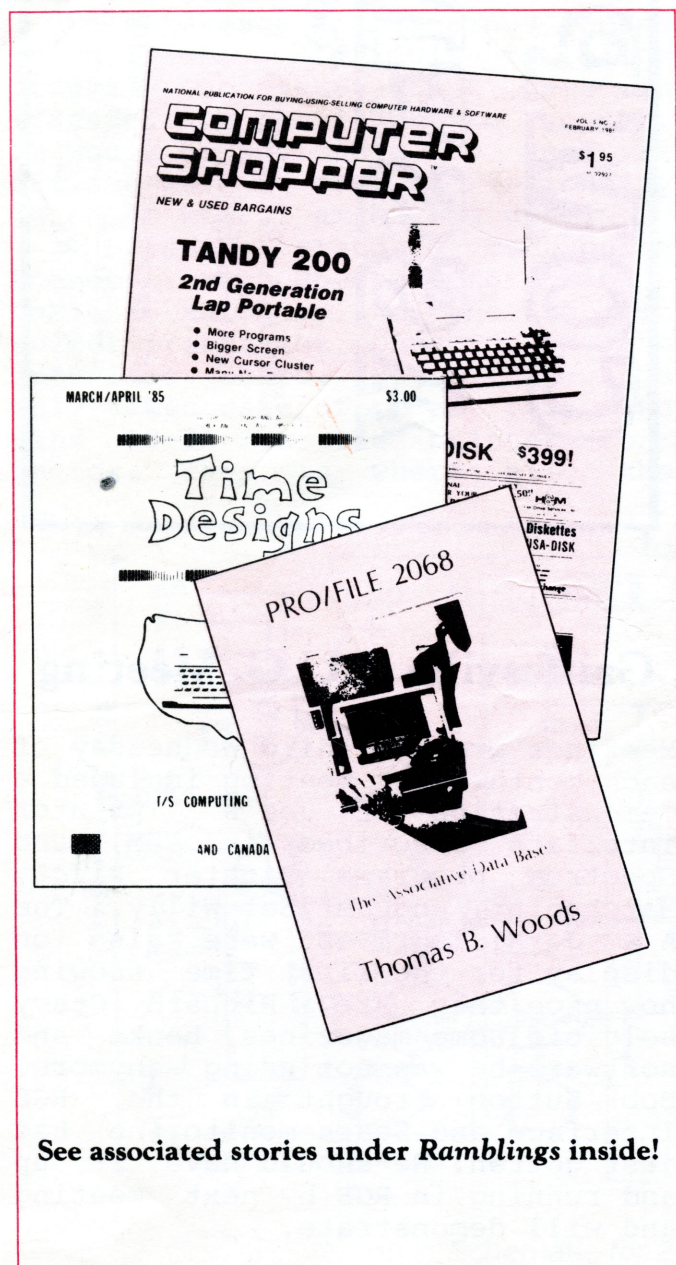
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TS 2068

The SINCLAIR/TIMEX USERS MAGAZINE**\$150****Volume III****MARCH 1985****Number 3****Spectrum+ Now in U.S.**

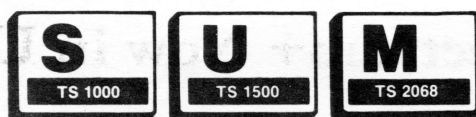
Bob Dills of English Micro Connection (EMC), 15 Kilburn Ct., Newport, RI 02840 401/849-3805 reports that they are an agent for Sinclair (and other English) computers. The Spectrum+ sells for \$159.95 postage paid and has an average delivery time of less than three weeks. He also has the Interface I and microdrive kit (includes four very useful programs on wafer) for \$129.95 and the Kempston programmable joystick adapter at \$25. They are also exclusive dealers for OCP, Highsoft, Beyond, and Ultimate software with prices around \$12.95 for most. They are carrying the Rotronics Wafadrive and interface which works with the 2068 with Spectrum emulator made by Damco for \$229.95.

Bob also told me that most shops are not supporting the ZX81 in England anymore, everything is special order. Also, he told me of a European computer trade magazine which announced that the Timex 2068 is now being sold in Portugal under the name of the "Silver Avenger" with the Spectrum ROM inside. The article went on to say that only Portugal and North America have distribution rights to the 2068 - read into that what you want.

**See associated stories under Ramblings inside!**

New Computer Repair Center

Timex computer's Little Rock repair center has turned over all operations to TS Connection at 3832 Watterson, Cincinnati, OH 45227 (513) 271-5575 8am to 10pm EST. Jack Roberts says repair charges are running \$15-\$20 for 1000's and \$35 to \$40 for 2068's. They also carry all Timex products for sale at competitive prices.



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Gainesville T.U.G. Meeting

Meetings are the third Wednesday of each month. Last meeting included a demonstration of Joe's printer interface described in SUM, and Spectrum programs Fighter Pilot, Matchpoint, and Jet Set Willy. The A & J Microdrives were also on display for the first time showing how nice they are. Richard Cravy sold off some magazines, books and software he was not using anymore. Bob Sutton brought in the RGB interface and Sears monitor he had just gotten. He should have it up and running in RGB by next meeting and will demonstrate.

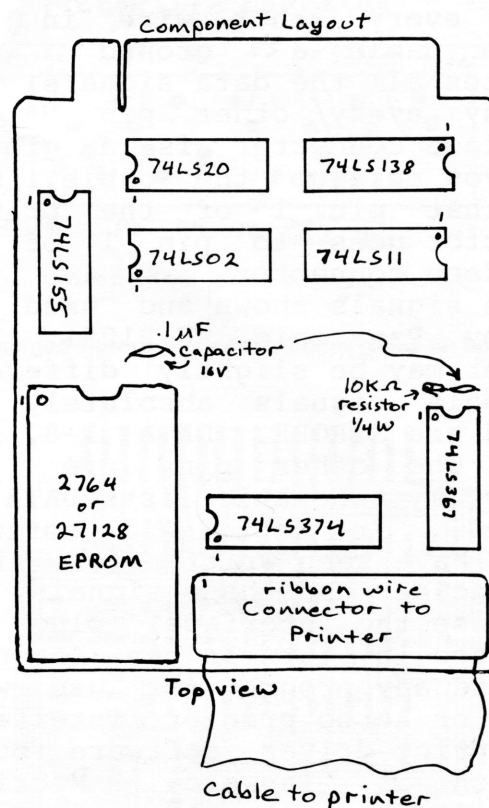
2068 Printer Interface and Rom Card

This month I finish up my series on the printer interface with the circuit board layout and simple print driver software.

In reconfiguring the layout to include the ROM interface, I had to rearrange things a bit, so here is the final version of the schematic showing the new pin configuration. The schematic to the ROM interface is identical to what is shown in the 2068 technical manual.

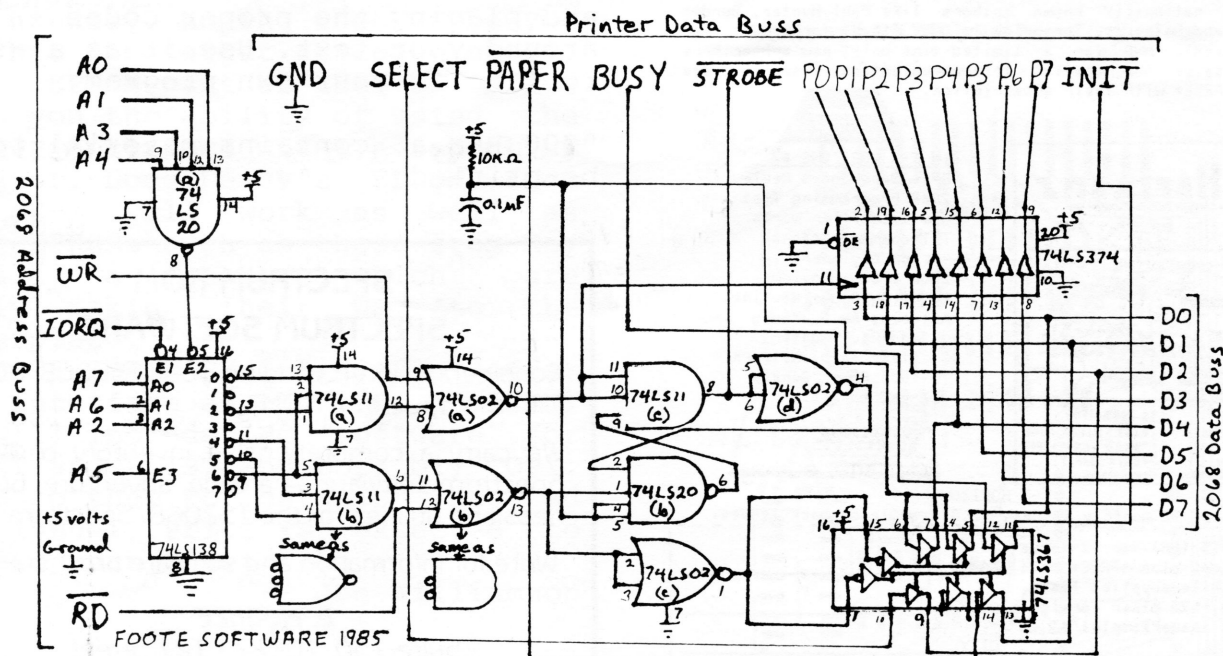
This takes a double-sided board which is very difficult to align properly, so take great care in transferring the layout to copper. It would be advisable to send it off and have it done professionally which is what I am having done.

I used a standard centronics connector with 26 conductor ribbon cable to match up to the 26 pin solder transition connector on the interface board. Note that this only takes care of pins 1-13 and pins 19-31 on the printer connector. This is where all the



Component layout on circuit board (shown actual size)

necessary signals for proper operation are (see diagram). Also note that all the signal pins (except INIT) are on the top side



Schematic for 2068 Printer Interface

```

9010 FOR n=1 TO LEN a$
9020 IF IN 127<>236 THEN GO TO
9020
9030 OUT 123, CODE a$(n)
9040 NEXT n
9050 OUT 123, 10
9060 RETURN

```

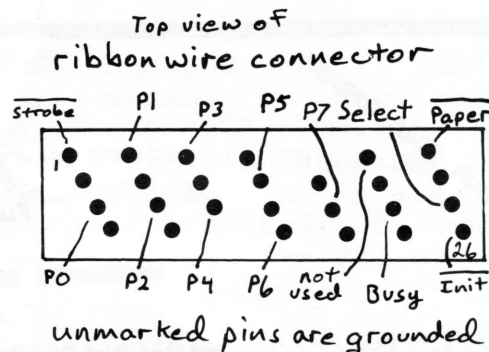
Line 9010 checks for the length of the string to be printed and sets this as the number of loops the program makes. Line 9020 checks to see if the printer is ready for data to be sent. My printer reports with 236 when its ready to receive data, yours may be different. To check yours, simply turn on the entire system and enter: PRINT IN 127 or 63 or 191, and this will give you the ready data. Use that if its different from mine. Once the printer is ready for data, line 9030 outputs to the printer the current 'slice' of a\$. It then goes back and gets the next character and continues till all of a\$ has been sent. Line 9050 then tells the printer that its finished sending and to do one linefeed.

If you like to experiment, try removing line 9020 and see how far you can print till things get jumbled. I can usually print at least a whole line. Without line 9020, its like shooting in the dark continuously, hoping that maybe you will hit the target at least once!

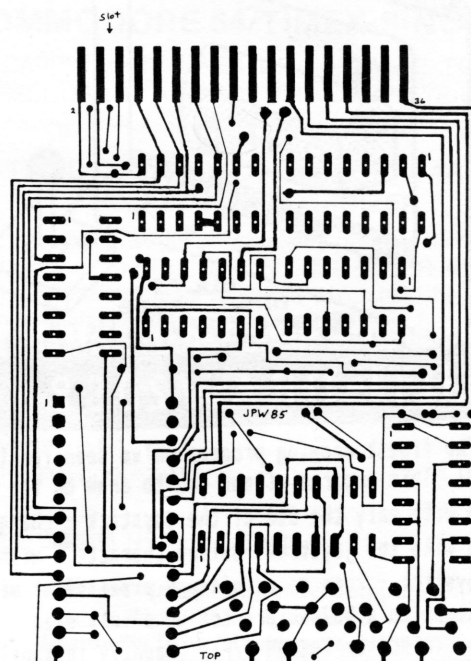
The EPROM part of the interface gives you the ability of using the printer interface with a spectrum emulator. Doug Dewey's EPROM from his EMU-1 will work as well as other EPROMs such as those from Ray Kingsley and others which are slowly making their way to the marketplace.

FOOTE SOFTWARE intends to offer this interface as the FOOTE PRINT and will include MC software for LPRINT and LLIST and possibly COPY. Write to them for details (see ad this issue). Price is expected to be less than \$50.

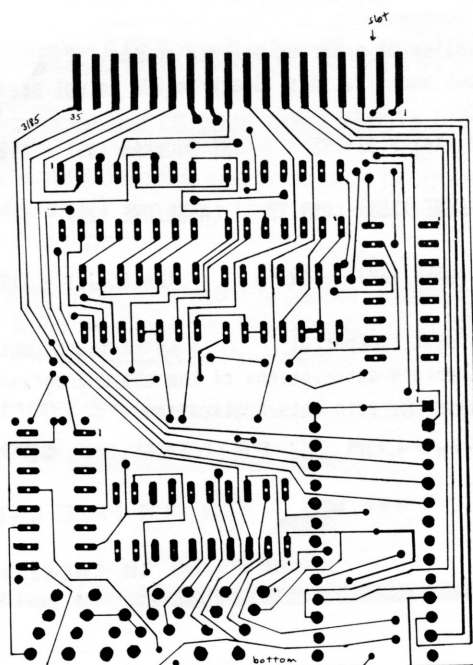
-- Joe Williamson



Enlarged view of wire ribbon connections on board



Front and back of circuit board (actual size)



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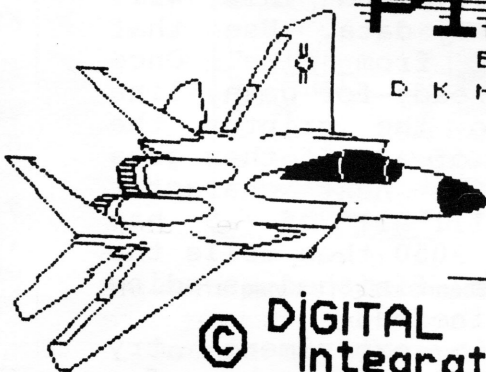
TS 2068

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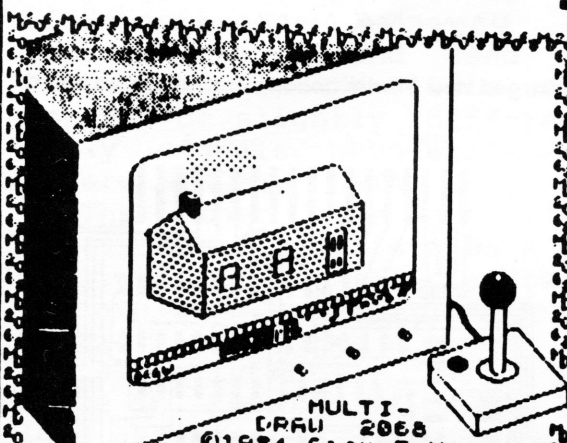
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* JS=Joystick Control * KB=keyboard Control

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Reader Feedback

ANDREW KOSIOREK, 2192 Glenbury Ave., Lakewood, OH would like to contact other TS modem users on Compuserve. His CIS ID is 75046, 3420. He has been having problems with his 2068 crashing when he exits to BASIC with a full buffer. Any suggestions?

A. NIEUWENHOFF, 16 Heritage Rd., Sutton, MA 01527 writes: "I would like to know if any readers of SUM magazine who own a Gorilla Banana printer have any knowledge of where to 2K or 4K buffer is available as mentioned in the printer manual. Also, does anyone market a printer driver program for this printer (RS-232 serial) for a TS1000/1500 other than Byte-Back Co.?"

FRANK FRENCH wrote to ask: "Can the A & J Microdrive originally issued for the ZX81/TS1000 be used on the 2068?" I spoke with Jim Howell of A & J recently and he told me that the two drives are entirely different and even use a different cartridge. The interface for the 2068 will not work with the older type of microdrive.

ROSS MacLEOD asks: "Can the Gorilla Banana be used with the Aerco interface?" Yes, it is the same as the Radio Shack DMP 100 and the Seikosha 100 which are listed on the Aerco print driver menu.

-- Joe Williamson

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A & J Microdrive Review

Its been out for three months now, its easy to use, and its fast! The A & J Microdrive has been a long awaited peripheral which is the best thing to come along since the 2068 itself!

The drive is housed in an attractive 2 3/4 x 4 3/4 x 7 inch black case and is connected to the interface by a 16 inch ribbon cable. The interface looks like the old Memotech interfaces for the ZX81. It measures 2 x 6 3/4 x 3/4 and has an expansion card edge out the rear and another card edge out the top for a soon to be released printer cable. Also out the rear are two sockets designated for drives 0 and 1.

Up to 2 drives can be connected at once with a simple POKE to change the drive you want to access. The drives are accessed the same way as a cassette is, by LOAD, SAVE, and VERIFY. One of the nicest features of the drive is the fact that it takes up no user RAM. The Sinclair microdrive and Rotronic's wafadrive both use a good bit of memory for their operating system which means that some programs cannot be transferred over to wafer due to the amount of memory they take up.

The "@" symbol as the first character in a file name signifies to the computer that the microdrives are to be used instead of a cassette. Example: LOAD "@star" loads a program named "star".

When getting started, the first thing that must be done is format the microwafer; this must be done to all microwafers before they are used. Once done, it need not be done again unless you want to erase all information on a wafer.

Once formatted, the wafers are ready for use. SAVEing a file is done by giving each file a number starting with 1, then 2, etc. It is important to remember that you must save the files in order. You can't save file 4 when you have never

saved a file 3 on that particular wafer. Typically, you have nine files you can save on a wafer (1-9), but more can be saved per wafer if needed by following the instructions provided in the addendum to the User's Manual. A typical save instruction would look like this: SAVE "@1,sample". It means save the file named "sample" as file #1 on the microdrive.

You have all the load and save options as you do with cassette, but the filename can be no longer than 7 characters. To load a program, you must always give the entire file name. LOAD "" or LOAD "@" won't load the first file it finds like with cassette. Here is a typical command: LOAD "@sample". Notice you don't have to remember the file number on loads. You can have the microdrive and cassette connected to the computer at the same time and access them both.

To see what is on a wafer, use LOAD "@". This will cause the drive to look for a non-existent file and list all files searched to the screen. When resaving a revised file, you must make sure that the revised file is no longer than the first version of that file, or you may write over the first part of the next file (if any) saved.

If you are planning to revise a file and want to save other files thereafter, create a dummy variable and dimension it to a length that will cover any future revisions. Use something like DIM x(1000) then save the file and any others afterwards. This will set aside extra room for future revisions. Just make sure that you CLEAR this variable when you go back and add to that file. Always try to keep track of how many bytes you have used in your program by using the FREE command. Of course the obvious solution to all of this is to store only one file per wafer. Use short wafers. This will also cut down on SAVE and LOAD time. The 20 ft wafer holds 28K which is more than enough for any one single program.

Now for a speed test. Formatting takes the longest since the drive

searches for the splice in the "endless tape" and writes a end of file mark, and then goes thru the tape again and marks the other end; then it knows where to put a file without writing over the splice. Formatting can be used to erase the whole tape. Formatting a 35 ft. wafer takes 1 minute 18 seconds.

Saving a full 48K (capacity of a 35 ft wafer) takes 43 seconds and loading takes 48. Of course this was under ideal conditions because I ended just before the file began, so upon loading, the file was right there. If the file you wanted has already been passed, you would have to wait for the drive to search through the entire tape before it found the file you are seeking. In more understandable terms, I can be up and running Tasword in less than 25 seconds! See Tasword to wafer conversion in this issue. With the speed about 6 times that of a standard cassette, LOADING a SCREEN\$ is fun; it takes 5 seconds!

You can protect a wafer by knocking out the write protect tab on the side. An error code of 0, Invalid Stream, is reported if you try to SAVE to a write protected wafer. You can also get an error code when you try to save a file when there isn't enough room on the wafer, when you use an invalid file name, when there is a tape loading error and when you press BREAK. And you get the satisfying 0, OK report for a successful operation.

A ribbon cable and software for word processing should be available by the end of March according to Jim Howell of A & J Microdrive. The kit will have a centronics printer cable, software on wafer, and an IC chip which must be installed; the kit will sell for \$49.95.

If you feel like experimenting, the parallel port is mapped to port 66 of the 2068. The signal pins are visible from the front and starting at finger marked 25 are STROBE, DATA 1-8, unused finger, BUSY. The rest on the front side are unused. The backside fingers are grounds except 2 which has no connection. Jim also told me that they are

negotiating the buying of Entrepo, the company that manufactures the wafers which should help in bringing down the prices on wafers (now average around \$4.50 each).

I dread the times when I load a tape on my ZX81 or 1500; now I also dread the times when I have to use a cassette on the 2068! I have been quite pleased with my drives so far, and even at \$200, a good deal. They are the only microdrives out right now which operate in 2068 mode. The others all require a Spectrum emulator. I do wonder why the units are black! Why can't it be silver like the rest of the 2068 line? That goes for any interfaces that come out for the 2068.

-- Joe Williamson

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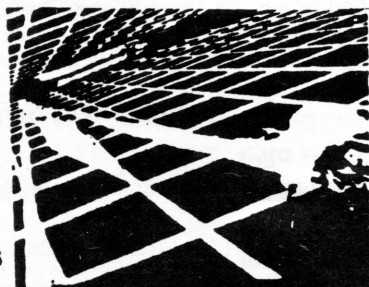


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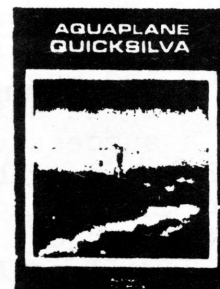


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Tax Time...and Some Help

Here it is just one month before income tax filing time and, if you are like me, you could use a little (or a lot) of help preparing your tax forms. For those with TS 2068s there is help available in the form of SPECTAX85 from Poret-sky and Poret-sky, 521 Argyle Rd., Brooklyn, NY 11218.

Retailing for \$16.95 ppd., this program will not put a dent in your refund check, but will help you fill out your 1040 and accessory forms quickly and easily. Spectax leads prospective filers through Form 1040 as well as Schedules A, B, C, D, E, G, R, W, SE and Form 2441.

When the program is first loaded you are asked if you want regular or heavy print. Selecting "heavy" causes an alternate character set to be used producing heavier characters both on the screen and on the 2040 printer. To go through the program, you need to have already gotten your papers in order and have copies of all your IRS forms with you as the program asks you for data which may require clarification from the respective tax form. Spectax asks you for entry of the proper data in the sequence required by the tax forms, and automatically does the calculations which you would normally have to do manually.

At the completion of each form, a complete one screen reproduction of all info recorded on that form is provided so that you may review it, go back and correct it, and print it out. This last action is important since data entered on all forms except 1040 and A and B is not saved in memory, only the info that is transferred back to the 1040 is retained. Your printout will be your only record of the specific data you entered on each of the other forms. This printout is necessary for filling out your real forms afterward.

There is 2K of memory reserved at the top of ram for adding the

software necessary to drive the Aerco or Tasman interface. This must be done by the user, as no documentation is provided explaining in detail that this can be done or how. In fact, except for one small sheet included with the cassette, there is no documentation at all. However, this was not a major problem as the software is fairly self-explanatory and very easy to use by anyone who has ever filled out their own forms before.

For married filers, Spectax automatically keeps married filing separately and married filing jointly calculations which allows those in this situation see which way offers the greatest tax advantage.

Lackings of the program are no documentation and no way to save your results on tape (though you might try breaking into the program after all data entry and save the whole thing to tape). But this is one program that is definitely better and quicker than using a pencil and calculator.

My recommendation is that you buy this program if you fill out your own tax forms and have a 2068. Poret-sky & Poret-sky, Inc. is a tax firm with many years experience and it shows in the ease with which this program helps you file your tax return.

-- Richard Cravy

Beginner's Programming, III

This month, let us first personalize our program. Clear the screen and ask your student to type his name. The name is ENTERed into a string variable and can be used any place in the program by calling the string variable.

```
3000 CLS
3005 PRINT AT 10, 4;"<--type your name-->"
3010 INPUT "your name";f$
3050 CLS
3060 PRINT AT 4,8;"Hello, ";f$
```


-Note- The 2068 lets you enter a prompt in your input statement in line 3010. I will use this format in the future. If you are using a 1000 series just ignore the prompt. Have you given numbering the problems any thought? A variable needs to be assigned and initialized to do our counting for us. Tell the computer where to place the number. Since we need to add 1 to our variable for each problem, let's start our variable value at 0. We also need a clean screen for each problem.

```
3040 LET c=0
3350 CLS
3340 PRINT AT 3,2;"No. ";c+1
3370 CLS
```

This line clears the number with the problem. EDIT line 3380.

```
3380 PRINT AT 3,2;"No. ";c+1; AT
6, 0;x;"+";y;"= ";z
3430 LET c=c+1
```

The correct answer routine works with the numbering routine and allows us to give the number of correct answers out of a given number. Assign and initialize a variable; decide number of problems to a series and increment the answer number.

```
3020 LET a=0
3330 IF c=10 THEN GOTO 1200
3440 LET a=a+1
```

The routine at line 1200 not only gives the number correct but also reinitializes the variables and asks if the student wishes to practice more.

```
1200 PRINT AT 10,6;"You got";a;"
out of ten."
1210 LET c=0
1215 LET a=0
1220 PRINT AT 12,3;"Would you li
ke another play?"
1230 PRINT AT 14,3;"press y or n
followed by ENTER"
1240 INPUT "y/n";b$
1250 CLS
1260 IF b$="y" OR b$="Y" THEN
```

```
GOTO 3070
1280 CLS
1290 PRINT AT 8,5;"Thank you for
playing, "; AT 10,5;f$
1300 PAUSE 200
1305 CLS
1310 STOP
```

You can EDIT the lines to the other parts of the program where they are needed.

Next month we will start on our LOGO. There is a smiley face if the answer is correct and a frowney face if the problem is wrong. Every child of any age that I have used this program with has enjoyed the fast feedback on his or her answers. Some have deliberately answered wrong just to see the frowney face develop.

-- Bill Woodward



Ramblings from the Publisher

These are the best of times for those of us who have Sinclair and Timex computers. There is so much more activity and excitement than we have seen up until now. I'll try to let you know about some of the good news crossing my desk right now.

SUM Magazine is not the only publication covering our computers. In addition to numerous user group newsletters, TS Horizons and Syntax magazines, there is also Syncware News written for those who like technical and hardware projects. Another new magazine is TIME

"The English Micro Connection"

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From TIMEX 2068 To ZX SPECTRUM

1) **SPECTRUM ROM** - You must remove the Timex ROM chip from the computer and replace it with a Spectrum ROM. While you will be able to run Spectrum software you will not be able to run 2068 software.

2) **EMULATOR** - The Emulator board fits into the 2068's cartridge dock. You are now ready to run Spectrum software. When you want to run 2068 software just remove the Emulator from the cartridge dock.

3) **ROMSWITCH** - The ROMSWITCH is a two-piece system; the first, contains a Spectrum ROM chip, and you must remove the Timex ROM from the computer and mount it on the ROMSWITCH board. You then insert the ROMSWITCH board where the Timex ROM was removed. The second step is to mount the magnetic slide switch to the computer case. When you want to run either Timex or Spectrum software just slide the switch to the mode required.

ALL THREE OF THE SYSTEMS LISTED ABOVE CAN BE OBTAINED FROM EMC. WE ALSO HAVE THE NEW MICRODRIVE ADAPTER BOARD THAT ALLOWS YOU TO NOW USE THE SPECTRUM MICRODRIVES.

| ITEM | \$ PRICE \$ |
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| <u>SPECTRUM ROM CHIP</u> | \$ 14.00 |
| <u>EMU 1 EMULATOR</u> | \$ 45.00 |
| <u>THE ROMSWITCH</u> | \$ 49.00 |
| <u>EMU 4 MICRODRIVE ADAPTER</u> To operate microdrives you also need an EMU 1 Emulator. | \$ 30.00 |
| <u>EMU 5 COMBO</u> The combo consists of an advanced version of the EMU 1 and a microdrive adapter. | \$ 75.00 |

"SPECTRUM HARDWARE SPECIALS"

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| | |
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| <u>ZX SPECTRUM EXPANSION SYSTEM</u> | \$ 129.95 |
|-------------------------------------|-----------|

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| | |
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| <u>ZX MICRODRIVE UNIT</u> | \$ 61.50 |
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One Microdrive unit with an Introductory Cartridge.

| | |
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One blank Microdrive Cartridge, with at least 85K capacity.

| | |
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| <u>ZX LPRINT 111 INTERFACE</u> | \$ 45.00 |
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This Printer Interface has both an RS232 and Centronic output, no software is required due to the driver software being on EPROM. Cables are available for \$14.00 each.

| | |
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| <u>ADAPT RGB OUTPUT MODULE</u> | \$ 48.00 |
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DESIGNS, 29722 Hult Road, Colton, OR 97017. One year (6 issues) is \$15. The latest issue is about 32 pages plus covers and includes a number of reviews, some short programs, and an interview. It looks good.

A couple of other magazines worth getting are these: COMPUTER SHOPPER is a tabloid size magazine full of ads for computer "stuff", both classified ads and display ads. The prices are the best in the industry. There is also a section for Timex classifieds and at least one article on Timex in every issue along with articles and news about other small computers. It has about 200 pages per issue. Price is \$15.00/year (12 issues). It can often be found on larger newsstands like B. Dalton's. COMPUTER TRADER MAGAZINE is also a monthly costing \$15.00/year and having about 100 pages. It does much the same thing as Computer Trader without overlapping. A typical issue will have 5 to 10 Timex articles submitted by readers in addition to articles on Atari,

Apple, Commodore, and Kaypro. Send at least \$2 for a sample copy of either magazine. This kind of publicity can only help our machines and the companies that support them. Addresses: Computer Shopper, P. O. Box F, Titusville, FL 32781; 305/269-3211. Computer Trader, 1704 Sam Drive, Birmingham, AL 35235; 205/854-0271.

Remember PROFILE 2068? Thomas Woods made his fame with ZX Profile for the 1000 series--an extremely useful and easy to use filing system. When he introduced Profile 2068, it had great potential, but no documentation! Tom has at last sent out the manual. AND IT WAS WORTH THE WAIT! The manual has over 140 pages of information on using, modifying, and customizing Profile 2068. This is truly a professional filing system which has almost unlimited possibilities. I wish that I could get a program for my Apple that was as versatile and as inexpensive. Buy it by all means! Thomas B. Woods, P. O. Box 64, Jefferson, NH 03583. Cost is \$29.95.

-- Richard Cravy



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